ABSTRACT OF THE DISCLOSURE

Systems and methods for a machine vision metrology and inspection system are provided for excluding extraneous image features from various inspection or control operations of the machine vision system. The extraneous image features may be in close proximity to other image features to be inspected. One aspect of various embodiments of the invention is that no filtering or other image modifications are performed on the "non-excluded" original image data in the region of the feature to be inspected. Another aspect of various embodiments of the invention is that a region of interest associated with a video tool provided by the user interface of the machine vision system can encompass a region or regions of the feature to be inspected, as well as regions having excluded data, making the video tool easy to use and robust against reasonably expected variations in the spacing between the features to be inspected and the extraneous image features. In various embodiments of the invention, the extraneous image excluding operations are concentrated in the region of interest defining operations of the machine vision system, such that the feature measuring or characterizing operations of the machine vision system operate similarly whether there is excluded data in the associated region of interest or not. Various user interface features and methods are provided for implementing and using the extraneous image feature excluding operations when the machine vision system is operated in a learning or training mode used to create part programs usable for repeated automatic workpiece inspection. The invention is of particular use when inspecting flat panel display screen masks having occluded features to be inspected.